IN THE SPECIFICATION:

Kindly replace the paragraph beginning on page 18, line 9, with the following:

To meet the severe receiver requirements of the gigabit Ethernet, the near-end echo/near-end crosstalk canceller of this invention has a correlator **100** of Fig. 3 that creates each coefficient C_0, ..., C_j **125** of the FIR filter **105** that is the function of the previous coefficient. Each coefficient C_0, ..., C_j **125** is the weighted sum of the previous coefficient and the received signal ~~X(k)~~ **X(k+1)** **115** multiplied by a time delayed version of the transmitted symbol **b(k)** **120** and is summarized as follows:

$$\cancel{C_j(k+1) = (1-\beta) * C_j(k) + \frac{\beta}{\sigma^2} * x(k) * b(k-j) \qquad EQ.1}$$

$$C_j(k+1) = (1 - \beta) * C_j(k) + \frac{\beta}{\sigma^2} * x(k+1) * b(k-j) \qquad EQ.1$$

where:

$C_j(k)$ is the ~~previous~~ <u>filter</u> coefficient <u>from the previous time period</u>.

Cj(k+1) is the filter coefficient for the FIR filter for the ~~next received signal~~ <u>current time period</u>.

~~X(k)~~ **X(k+1)** is the ~~present received~~ signal <u>received during the current time period</u>.

b(k-j) is the transmitted signal delayed by j delay units.

σ^2 is the variance of the transmitted symbol. For gigabit Ethernet $\sigma^2 = 2$.

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β is a weighting factor.

Kindly replace the paragraph beginning on page 19, line 15, with the following:

Refer now to Fig. 5 for a discussion of a first embodiment of the correlator 100 circuit of the near-end echo/near-end crosstalk cancellation circuit of this invention. The received signal X̶(̶k̶)̶ X(k+1) 115 and the delayed transmitted signals b(k-j) 240a, 240b, 240c, ..., 240d are the inputs to each of the first multipliers 200a, 200b, 200c, ..., 200d. The delayed transmitted signals b(k-j) are the outputs of each of the unit delay elements 205a, 205b, 205c, ..., 205d. The unit delay elements 205a, 205b, 205c, ..., 205d successively delay the transmitted signal b(k) 120 to form the delayed transmitted signals b(k-j) 240a, 240b, 240c, ..., 240d.

Kindly replace the paragraph beginning on page 20, line 15, with the following:

The weighted products 250a, 250b, 250c, ..., 250d and the weighted previous filter coefficients 260a, 260b, 260c, ..., 260d are respectively the inputs to the summing circuits 220a, 220b, 220c, ..., 220d to be additively combined to form the new filter coefficients Cj(k+1) 225a, 225b, 225c, ..., 225d. The new filter coefficients Cj(k+1) 225a, 225b, 225c, ..., 225d are placed at the inputs 125 of the FIR filter 105 of Fig. 3 to set the FIR filter 105 to reproduce the near-end echo/near-end crosstalk for the received signal X̶(̶k̶)̶ X(k+1) 115 at a next instant.

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Kindly replace the paragraph beginning on page 20, line 23, with the following:

It can be shown that the function of EQ. 1 can be rewritten to the form:

$$\cancel{C_j(k+1) = C_j(k) + \beta\left(\frac{x(k)*b(k-j)}{\sigma^2} - C_j(k)\right)} \qquad \cancel{EQ.2}$$

$$C_j(k+1) = C_j(k) + \beta\left(\frac{x(k+1)*b(k-j)}{\sigma^2} - C_j(k)\right) \qquad EQ.2$$

As described above, the weighting factor β is chosen in a manner similar to an equivalent weighting factor used in to what is termed a leaky recursive least squares method to calculate the coefficients of an adaptive filter. For this embodiment of this invention, a number of the symbols n (for instance, n=256 symbols) is chosen and the weighting factor β is equal to the inverse of the number of the symbols. That is:

$$\beta = \frac{1}{n} = \frac{1}{256} \cong .004$$

Kindly replace the paragraph beginning on page 21, line 10, with the following:

Since the transmit signals b(k) 120 and the received signals $\cancel{X(k)}$ X(k+1) 115 are digitized samples of the signals transmitted and received on the communication medium (cable 10 of Fig. 2), the multiplication can be performed with shift registers. Refer now to Fig. 6 for a discussion of a correlator 100 of a second embodiment of the near-end echo/near-end crosstalk canceller of this invention.

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Kindly replace the paragraph beginning on page 22, line 20, with the following:

The weighted products **350a, 350b, 350c, ..., 350d** and the previous filter coefficients **355a, 355b, 355c, ..., 355d** are subtractively combined in the arithmetic combining circuits **370a, 370b, 370c, ..., 370d** to form the preliminary weighted sums **375a, 375b, 375c, ..., 375d**. The preliminary weighted sums **375a, 375b, 375c, ..., 375d** and the previous coefficients **355a, 355b, 355c, ..., 355d** are the input to the summing circuits **320a, 320b, 320c, ..., 320d** where they are additively combined to form the new filter coefficients $C_0(k+1)$, $C_1(k+1)$, $C_2(k+1)$, ..., $Cj(k+1)$ **225a, 225b, 225c, ..., 225d**. The new filter coefficients $C_0(k+1)$, $C_1(k+1)$, $C_2(k+1)$, ..., $Cj(k+1)$ **225a, 225b, 225c, ..., 225d**, as stated prior, are the inputs **125** to the FIR filter **105** of Fig. 3, to set the FIR filter **105** to reproduce the near-end echo/near-end crosstalk for the received signal ~~X(k)~~ X(k+1) **115** at the next digitized sample of the received signal ~~X(k)~~ X(k+1) **115**.

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